Written Statement of

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Mr. Chairman and Members of the Committee,

I am pleased to have this opportunity to share with you some examples of the role telemedicine can play in promoting U.S. objectives in the developing world.

My Bureau at the Department of State, the Bureau of Oceans and International Environmental and Scientific Affairs (OES), has sponsored two pilot telemedicine projects in recent years, one in Pakistan and the other in Afghanistan in collaboration with India. Both projects have been quite successful so far, and we view them as potential models that could be replicated in other parts of the world.

In 2003 the United States and Pakistan signed a science and technology agreement to serve as an umbrella for a variety of cooperative activities, including activities designed to use the latest technologies to improve the quality of life of Pakistan's citizens. The first activity implemented under this agreement was a project developed by my Bureau's Office of Science and Technology Cooperation to help Pakistan build a telemedicine capacity.

With very modest resources--$75,000 in FY 2004 ESF funds provided under the U.S.-Pakistan S&T Cooperation Program--we were able to initiate a program designed to establish and support a model telemedicine training center at the Holy Family Hospital in Rawalpindi, Pakistan. First we arranged for two Pakistani doctors to discuss the basics of telemedicine at the Army's Medical Research and Material Command at Fort Detrick, Maryland. During their stay in the United States, the doctors also had the opportunity to establish valuable contacts with key members of the U.S. telemedicine community. The next step involved a partnership to provide telemedicine training to Pakistani medical specialists between Fort Detrick's Medical Research and Material Command and Dr. Ronald Merrill's Medical Informatics and Technology Applications Consortium at Virginia Commonwealth University. A first class of thirty Pakistanis has already completed the telemedicine training program. In addition to training, the program involves professional exchanges and equipment and digital video teleconference connectivity for the center in Rawalpindi.

Although this project is less than three years old, it has already had a positive impact on health care delivery in Pakistan and on U.S.-Pakistan relations. In response to last year's devastating earthquake in northeast Pakistan, the country's nascent telemedicine capabilities were deployed to help provide treatment to some 6,000 patients injured in the earthquake who sought medical care at 30 tent clinics set up in remote, mountainous areas of the country. The quick and effective U.S. response in assisting victims of the earthquake, a component of which was the telemedicine initiative, is generally credited with helping improve the standing of the United States in public opinion polls taken in Pakistan afterwards.

Our telemedicine project in Afghanistan grew out of a broader effort by the State Department to foster space cooperation with India. In 2001 President Bush and then-Indian Prime Minister Vajpayee identified civil space cooperation as a key area for improvement in U.S.-India relations. A major conference on U.S.-India space cooperation sponsored by my bureau in 2004 generated interest within both governments, and, consequently, space cooperation became an integral part of the U.S. approach for building a strategic partnership with India. Recognizing that India's national space agency, the Indian Space Research Organization, has a well established telemedicine program of its own, we proposed this as one possible area for collaboration.

Working closely with the staff of the United Nations Office for Outer Space Affairs, and with $50,000 in seed money from the State Department's Oceans, Environment, and Science Initiative (OESI) program, we developed a project in which the United States and India are collaborating to set up a pilot telemedicine program in Afghanistan.

Hospital infrastructure in Afghanistan is notably weak, particularly in remote rural areas of the country. Fifty of Afghanistan's 330 districts are lacking basic medical or health facilities. Afghanistan's mountainous terrain, poor land transportation networks, and weak education infrastructure make it difficult to upgrade health care through the traditional means of educating more doctors and nurses and building more health clinics. These same conditions make Afghanistan a particularly appropriate candidate for the introduction of telemedicine technologies.

The ultimate aim of the project we are sponsoring in Afghanistan is to establish a network of stations in remote areas that can be used for telemedicine consultations. Each remote station will have an off-the-shelf Very Small Aperture Terminal (VSAT) to communicate by satellite communications networks with larger, more sophisticated medical facilities. This will allow medical services to be provided in remote villages through tele-consultations with specialists at hospitals in Kabul or elsewhere.

The first phase of this project involved training a small team of Afghan doctors and information communications specialists in the basics of telemedicine and how to operate equipment that we hope can be installed at Kabul's Indira Gandhi Hospital in the future. This phase was completed in late 2005. The second phase of the project, which is already underway, involves using the knowledge and skills gained by these five trainees to design a telemedicine program for Afghanistan, an activity that has strong support from the Afghan Ministry of Public Health.

In addition to these two projects, I should also mention that the UN Office of Outer Space Affairs, with strong encouragement from the State Department, has been active in trying to promote broader awareness of telemedicine's potential in the Third World. It has organized several regional meetings or workshops on telemedicine and is planning more such activities; for example, it is sponsoring a training course on tele-health to be held in Mexico in May 2007, which will benefit Latin America and the Caribbean region.

Our experience with each of these initiatives has been very positive. There is enormous untapped potential for using modern telecommunications and computer technologies to provide health care in developing countries, and, in particular, for using these technologies to extend health care to remote, inaccessible villages where existing health care facilities are poor or non-existent. In such environments, building indigenous telemedicine capabilities can be a relatively efficient means of having a positive impact on villagers' quality of life. Moreover, telemedicine cooperation is not a one-way street; there are potential benefits for the United States as well as its partners. For example, functioning telemedicine systems in remote parts of the world can serve as an advance disease surveillance capacity that may be

of importance to public health in the United States, giving us early warning of overseas outbreaks of polio, avian flu, or other infectious diseases. Telemedicine cooperation can also serve as a useful "confidence building" measure between antagonistic countries, since cooperation can take place without physically crossing national borders. We believe we may one day be able to craft a regional telemedicine initiative that includes historical adversaries India and Pakistan, along with their South Asian neighbors. We would also be interesting in collaborating with others on pilot projects in Africa and Latin America, if such opportunities arise. The State Department and the OES Bureau intend to continue to play a role in seeking opportunities to promote telemedicine in the developing world.

Thank you for the opportunity to testify. I would be pleased to respond to any questions you may have.